

QUESTIONS AND ANSWERS. Miscellaneous.

CODLING MOTH.

Last year our apples were greatly destroyed by worms. Could you give cause and a means of prevention? The orchard has for years been in crop of fodder corn. There is a fence along one side, on which limbs have been piled for many years. Should it be cleaned out? The trees in the orchard are getting quite old.

Ans.—Without fuller particulars than those given, it is impossible to state positively what insect caused the injury complained of; but there is every probability that it was that destructive foe of the fruit-grower, the codling worm. This is the insect which causes the "wormy" apples with which everyone is so familiar. The worm, or larva, which produces the burrow, hatches from an egg which is laid by the parent insect on the young fruit or nearby leaves, shortly after the blossoms have fallen in the spring. The young larva usually finds its way in a short time into the "blossom" end of the fruit; and, after feeding there for a short while, burrows in towards the core of the apple. In three or four weeks it is full-fed, and the injured apple in most cases, sooner or later, drops to the ground. Whether the apple drops or not, the worm bores out of it and seeks for shelter. This it most commonly found in the crevices of the loose bark of the tree trunk, as also in any rubbish which is conveniently near. Here it spins for itself a covering of silk, and after spending a couple of weeks in what is known as the pupal or resting stage, it comes out as a small, dull-colored moth. In the more northern parts of the Province, the larva remains in its silk enclosure until the following spring; but in South-western Ontario, the moth emerges at once, and lays eggs for a second brood of the worms, whose life-history is much the same as that of the first brood, except that they remain in their shelters over winter.

To deal successfully with this pest, requires thoroughness, care and some work in applying a few simple measures. Where there are two broods in a year, as in South-western Ontario, the following are the principal steps to be taken: Within a week or ten days after the blossoms have fallen, spray carefully with Paris green. At this time, the young fruits are still standing upright on their stems in such a way as to catch the poison in the cavities at the "blossom" ends, at which the majority of the young worms enter the fruit. This spraying, which may be repeated in case it is followed closely by rain, should destroy a large percentage of the worms; and it is only at this stage that they can be reached by poisons. Those which escape this poisoning cannot be prevented from doing their damage to the crop; but many of them can still be prevented from maturing into the moths which would lay the eggs for the second brood. One way which is often practicable is to allow growing pigs to gather up the "wormy" apples as fast as they fall. An additional method is to loosely fasten coarse cloth or sacking around the trunks of the trees, after having first scraped off the roughest of the bark. The worms coming to the tree from the apples which they have left, take shelter and spin up in the folds of the bandages. The bandages should be put on four or five weeks after the blossoms fall, which is usually near the end of June; and need to be removed about every ten days, to destroy the worms before they have had time to change to the moths and escape. If this is carried out faithfully for the following couple of months, the numbers of the insect can be very greatly reduced; but if the bandages are neglected, they simply furnish the worms with a welcome retreat, and do more harm than good. By spraying in the spring, and following this up with bandaging in summer, many fruit-growers succeed in getting almost entirely sound crops of apples. It means a lot of work, especially to bandage, and it must be kept up from year to year, since one's neighbors cannot be all persuaded to keep

down the worms in their orchards; but many who practice it, testify that it pays in the extra marketable value of the crop. Just how much the conditions mentioned in the above query had to do with the injurious numbers of the insects on these apples I cannot say, but it is certain that any kind of rubbish lying about an orchard will serve to harbor not only the codling worm, but hordes of other insect pests, and should, by all means, be cleaned up and burned.

O. A. C., Guelph. H. GROH. SPRING-BALANCE SCALE. Where could I secure a spring-balance scale, for keeping daily milk records; one that would weigh at least 35 lbs.?

Ans.—Inquire of your local hardware merchant, or correspond with the Dairy and Cold-storage Commissioner, Ottawa, Ont.

SEEDING ALFALFA ON POOR SANDY LAND.

What is the best kind of alfalfa seed to sow on sandy soil, it being in poor condition, having been in grain for several years? Do you think it would amount to anything? How much seed would be required to the acre?

Ans.—Sow the ordinary common alfalfa seed twenty-five pounds per acre. While this land is not in very favorable condition for seeding to alfalfa, it is unquestionably in need of being seeded to something, and it may be worth trying alfalfa at once. A light top-dressing of rotted barn-yard manure might be applied now, providing same is reasonably free of noxious weed seeds (the rotting will help to kill them), and as soon as you commence working the land, apply one or two loads per acre of unleached wood ashes. If available, thirty bushels of air-slacked lime would also help. Work up well, and seed either alone or with a bushel of barley per acre. Send twenty-five cents to the Bacteriologist, O. A. C., Guelph, for a bottle of nitro-culture to treat your alfalfa seed before sowing.

MAKING A DRY BATTERY.

Please tell me how to construct a dry battery.

Ans.—Make a round can of zinc, without a lid, six inches deep, 2 1/2 inches in diameter. Solder a binding screw to its rim. Cut a cardboard disc to fit tight inside can, and push home to bottom. Take a strip of blotting paper, long enough to go thrice around inside of can and wide enough to project 1/2 inch over edge of can. Roll up the paper, put in can, and unroll it until it fits tightly to can. Procure a piece of carbon, about 1/2 inch in diameter and 7 inches long. Flatten both sides of one end with a file, and drill a hole to take binding screw. Heat flat end, and dip into melted paraffin 1 1/2 inches deep, until it does not smoke much when withdrawn. Stand with flat end down to cool. This forms the carbon pole. Procure some chloride of zinc (crystals); make a saturated solution of it, using distilled water. To this add the same weight of sal ammoniac as the zinc chloride used. This forms the "battery solution." Procure some powdered carbon and manganese dioxide. When all is ready, fill the can with the battery solution until the blotting paper is saturated; pour the solution out; turn the can upside down, and drain. Set can upside down on blotting paper to dry a little below saturation. Take equal parts of carbon powder and manganese dioxide and moisten with battery solution until they are no longer dusty, but not in a paste. Next, set the carbon pole in center of the can, and put 1/2 inch of pure, dry sand in the bottom. On top of this put two table-spoons mixture of carbon and manganese, and tamp it down firmly. Put in more of mixture and tamp again, using hammer and being careful not to disarrange blotting paper. Continue filling thus until within half an inch of top of can. Then fold the blotting paper over on top of the black mixture, but take care it does not touch the carbon pole. Now fill the remaining half inch of the can with resin, tar, or with this mixture. Resin, one part; tar, one part; soapstone or powdered slate, one part, melted in a clean pot, and stirred thoroughly. Next, put binding screw in carbon pole, wrap the cell in paraffined paper, leaving top open, but covering bottom, and the cell is ready for use.

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